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ABSTRACT

A study was undertaken to determine the operational reading levels and skills of beginning office employees and to compare the readability of classroom and on-the-job materials. Clerks and secretaries who had been employed for two years or less were observed and interviewed to collect the data. Statistical analysis revealed that secretaries read significantly different materials than did general clerks. Most of the reading was for verifying, comprehending, and proofreading; but the secretaries verified different materials than clerks, while the general office clerks read more materials for comprehension. Secretaries read more rough draft materials, whereas clerks read more printed materials. There was an approximate balance in the reading of typed materials between the two groups. Readability of on-the-job materials varied between 10.5 for order forms/invoices to 12.9 for labels on packages. No significant readability differences were found between instructional and on-the-job materials. It appeared that textbooks, an instructional simulation, and on-the-job materials provided similar distribution of comprehending and proofreading materials, though simulation materials emphasized more verifying skills than on-the-job materials. (RL)

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"An Analysis of the Nature and Difficulty of Reading Tasks Associated With Beginning Office Workers Jobs in the Columbus, Ohio Metropolitan Area"

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The problem of reading in the American schools has become one of national concern. We have often heard comments from our friends, neighbors, business associates and colleagues such as Johnny and Mary can read well enough to graduate from high school but he/she can't read well enough to get a job, how can that be? We as business and office education teachers are particularly vulnerable to such criticism and accountability especially since the passage of the Vocational Education Act of 1963 where monies were allocated to business education programs for the purpose of training students for entry level office jobs.

Because of the voluminous data available on manipulative skills demanded in the office environment, I think we have done a pretty good job in focusing on the typing and shorthand skills needed in industry, but I contend that we as business educators have tremendously neglected one of the most basic and inherent skills required of all beginning office workers in the performance of their daily routine tasks -- that inherent skill is reading. The results of a national survey compiled by the Educational Testing Service in 1972 revealed that more people spent more time at work related reading than any other type of reading. The office worker is no exception, almost every document that is handled has to be read.

Prompted by this realization, a study was undertaken with a two-fold purpose: (1) to determine the operational reading levels and skills required of the beginning office employee in order to function sucessfully in an everyday office position and (2) to see how closely related the reading materials made available to the potential office employee in classroom related learning activities were with the ones read on the job.

The beginning office worker for the purpose of this study is defined as a person who has been employed as a general office clerk or secretary for two years or less.

To collect the data, a stratified random sample of the business firms from the Columbus, Ohio Metropolitan area were selected from the Dun and Bradstreet Directories. Office workers hired in these firms were observed for an hour in the performance of their jobs after which they were interviewed to verify the observations made by the researcher.

In examining the data, some interesting comparisons were seen between the reading activities of the secretary and the general office clerk. The findings revealed that secretaries and clerks read basically the same job materials (Table 1). An inspection of Table 1 shows that the secretary's No. 1 group of items read on the job were letters, memos, and notes; whereas the clerks read order forms, invoices, and account statements as No. 1 items. However, since clerks were required

TABLE 1. JOB-RELATED MATERIALS READ BY SECRETARIAL AND CLERICAL PERSONNEL

Types of On-the-Job Materials	Job Title					
	Secretary			General Office Clerk		
	No.	%	Rank	No.	%	Rank
Letters, Memos, Notes	55	26.7%	1	26	17.1%	2
Reports, Pamphlets	21	10.2%	3	3	2.0%	10.5
Manual, Written Instructions	23	11.2%	2	21	13.6%	3
Order forms, Invoices and Account Statements	20	9.7%	4	35	23.0%	1
Financial & Statistical Tables	18	8.7%	5	6	3.9%	7.5
Form Letters	17	8.3%	6	17	11.2%	5
Reference Materials	12	5.8%	8.5	5	3.3%	9
Legal Documents	13	6.3%	7	10	6.6%	6
Catalog, Rate Books	12	5.8%	8.5	20	13.2%	4
Labels on Packages	11	5.3%	10	3	2.0%	10.5
Visuals	4	1.9%	11	6	3.9%	7.5
Totals	206	99.9%		152	100.0%	

to verify their invoices against catalogs and rate books; these items were rated fourth among the clerks, and only 8.5 among the secretaries.

A statistical analysis of the data reported in Table 1 using Chi-Square revealed that a significant difference does exist at the .05 level between the materials read on the job by secretaries vs. those read by general clerks.

When an observation was made to determine what types of reading skills the beginning office workers were employing to process the documents, it was found that they were either verifying -- checking one document against another, Comprehending -- understanding the content of the material, or Proofreading -- double checking typed materials (Table 2).

Although secretaries (45.3%) and clerks (54.7%) spent approximately the same amount of time verifying job materials, clerks tended to spend a little more time verifying materials than secretaries. A difference is seen in the type of materials that were verified between the two groups. Secretaries verified mostly labels on packages against directories for distribution purposes. Clerks, on the other hand, verified order forms and invoices with catalogs and rate books to insure the adequacy of descriptions, order numbers and prices. Secretaries (51.9%) and clerks (48.9%) also spent approximately the same amount of time comprehending job items with secretaries utilizing slightly more of their time using this skill

TABLE 2 LEVELS OF READING COMPREHENSION REQUIRED TO READ THE JOB MATERIALS HANDLED BY SECRETARIES SECRETARIES AND CLERKS

Types of On-The-Job Reading Activities		Levels of Reading Comprehension								
		Verifying			Comprehending			Proofreading		
		Secretary	General Clerk	Total	Secretary	General Clerk	Total	Secretary	General Clerk	Total
Catalogs, Rate Books	No.	3	10	13	8	9	17	1	1	2
	%	10.4%	28.6%	20.3%	8.7%	10.2%	9.4%	1.2%	3.5%	1.8%
Financial & Stat. Tables	No.	3	3	6	5	3	8	10		10
	%	10.4%	8.6%	9.4%	5.4%	3.4%	4.4%	11.8%		8.8%
Form Letters	No.	1	2	3	6	8	14	10	7	17
	%	3.4%	5.7%	4.7%	6.5%	9.1%	7.8%	11.8%	24.1%	14.9%
Labels on Packages	No.	7	2	9	1	1	2	3		3
	%	24.1%	5.7%	14.1%	1.1%	1.1%	1.1%	3.5%		2.6%
Legal Documents	No.	1	2	3	2	4	6	10	4	14
	%	3.4%	5.7%	4.7%	2.2%	4.5%	3.3%	11.8%	13.8%	12.3%
Letters, Memos, Notes	No.	2	1	3	26	18	44	27	7	34
	%	6.9%	2.9%	4.7%	28.3%	20.5%	24.4%	31.8%	24.1%	29.8%
Manual, Written Instructions	No.	2		2	17	20	37	4	1	5
	%	6.9%		3.1%	18.5%	22.7%	20.6%	4.7%	3.5%	4.4%
Order Forms, Invoices Acct. Statements	No.	3	15	18	9	11	20	8	9	17
	%	10.4%	42.9%	28.1%	9.8%	12.5%	11.1%	9.4%	31.0%	14.9%
Reports, Pamphles	No.	2		2	7	3	10	12		12
	%	6.9%		3.1%	7.6%	3.4%	5.6%	14.1%		10.5%
Reference Materials	No.	5		5	7	5	12			
	%	17.2%		7.8%	7.6%	5.7%	6.7%			
Visuals	No.				4	6	10			
	%				4.3%	6.8%	5.6%			
Total	No.	29	35	64	92	88	180	85	29	114
	%	45.3%	54.7%	100.0%	51.1%	48.9%	100.0%	74.6%	25.4%	100.0%

than clerks. We find that secretaries were required to understand letters (28.3%) more often than other job items. Letters were read for three basic reasons: (1) to answer telephone inquiries, (2) to edit the materials, and (3) to compose responses to routine correspondence based on form letter adaptations. Clerks, however, read manuals and written instructions (22.7%) mostly for understanding. This reading activity involved a detailed step-by-step procedure for performing a task. Such reading called for a complete understanding on the employee's part of the material being read. A tremendous difference is shown, however, in the amount of time secretaries proofread items (approximately 75%) as compared to clerks (25%). This finding is probably understandable because secretaries typed a great deal more items than clerks and consequently spent more time proofreading those typed items. A trend is seen once again with letters being the most proofread items by the secretary and order forms and invoices being the most proofread item by clerks.

When all of the job materials read by the beginning office workers were grouped according to job title (secretary/clerk) (Table 3) a slightly different viewpoint is seen. For example, general office clerks were required to read more materials for comprehension (57.9%) out of the total materials they read than were secretaries (44.7%). Therefore, even though secretaries

TABLE 3 THE LEVELS OF READING COMPREHENSION EXERCISED BY SECRETARIES AND CLERKS IN THE PERFORMANCE OF THEIR JOBS

Level of Reading Comprehension	Job Titles					
	Secretary			General Office Clerk		
	No.	%	Rank	No.	%	Rank
Comprehending (Information	92	44.7%	1	88	57.9%	1
Typing (Proofreading	85	41.3%	2	29	19.1%	3
Comparative (Verifying)	29	14.1%	3	35	23.0%	2
Totals	206	100.1%		152	100.0%	

read more of the total sampled comprehension materials than clerks (Table 2), more than half of the materials collected from the office clerks was read for comprehension.

The next question that comes to mind is in what form did these workers receive the reading materials. Viewing Table 4, we find that 37.4% of the materials were rough draft or handwritten, 32.7% were printed and 29.9% were typed. As one might have predicted, letters, memos, and notes (47.8%) comprised the largest amount of the handwritten/rough draft materials. Catalogs and rate books (25.6%) were the most often read items that were printed with form letters and manuals being the most often typed items. But, if you separate each job item you will find that financial tables, letters, order forms and reports are more than likely to be passed on to the worker in rough draft/handwritten form, and that catalogs, legal documents, reference materials and visuals (e.g., maps) will be printed. The typed documents most often will be form letters, labels and manuals (Table 5).

Table 6 denotes the form in which workers received their materials categorized by job titles. Secretaries read more rough draft materials (64.9%), whereas clerks read more printed materials (75.2%) with an approximate balance in the reading of typed materials between the two groups.

In order to effectively read these job materials, (Table 7) the office workers were required to read at least five months beyond the tenth grade when reading order forms and invoices and

TABLE 4 ORIGINAL FORM OF READING MATERIALS IN INDUSTRY

Types of Job Materials		Rough Draft or handwritten	Printed	Typed	Total
Catalogs and Rate Books	No.		30	2	32
	%		25.6%	1.9%	8.9%
Financial and Statistical Tables	No.	18		6	24
	%	13.4%		5.6%	6.7%
Form Letters	No.		10	24	34
	%		8.5%	22.4%	9.5%
Labels on Packages	No.	5		9	14
	%	3.7%		8.4%	3.9%
Legal Documents	No.		18	5	23
	%		15.4%	4.7%	6.4%
Letters, Memos Notes	No.	64		17	81
	%	47.8%		15.9%	22.6%
Manuals and Written Instructions	No.		16	23	39
	%		13.7%	21.5%	10.9%
Order Forms Invoices and Acct. Statements	No.	35		20	55
	%	26.1%		18.7%	15.4%
Reports and Pamphlets	No.	12	11	1	24
	%	9.0%	9.4%	.9%	6.7%
Reference Materials	No.		22		22
	%		18.8%		6.1%
Visuals	No.		10		10
	%		8.5%		2.8%
Total	No.	134	117	107	358
	%	37.4%	32.7%	29.9%	100.0%

TABLE 5 TYPES OF JOB MATERIALS RECEIVED BY BEGINNING EMPLOYEES IN THEIR ORIGINAL FORM

Original Forms of Reading Materials in Industry		Types of On-the-Job Materials											
		Catalogs and Rate Books	Financial and Statistical Tables	Form Letters	Labels on Packages	Legal Documents	Letters, Memos Notes	Manuals, Written Instructions	Order Forms, Invoices and Acct. Statements	Reports and Pamphlets	Reference Materials	Visuals
Rough Draft or Handwritten	No.		18		5		64		35	12		
	%		75.0%		35.7%		79.0%		63.6%	50.0%		
Printed	No.	30		10		18		16		11	22	10
	%	93.8%		29.4%		78.3%		41.0%		45.8%	100.0%	100.0%
Typed	No.	2	6	24	9	5	17	23	20	1		
	%	6.2%	25.0%	70.6%	64.3%	21.7%	21.0%	59.0%	36.4%	4.2%		
Totals	No.	32	24	34	14	23	81	39	55	24	22	10
	%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

TABLE 6 ORIGINAL FORM OF MATERIALS READ ON THE JOB BY SECRETARIES AND CLERKS IN VARIOUS INDUSTRIES

		Rough Draft or Handwritten			Printed Materials			Typed Materials		
		Secretary	General Clerk	Total	Secretary	General Clerk	Total	Secretary	General Clerk	Total
Services	No.	38	8	46	16	5	21	9	7	16
	%	43.7%	17.0%	34.3%	55.2%	5.7%	17.9%	20.5%	11.1%	15.0%
Retail	No.	15	5	20	6	22	28	7	14	21
	%	17.2%	10.6	14.9%	20.7%	25.0%	23.9%	15.9%	22.2%	19.6%
Manufacturing	No.	13	8	21		22	22	7	5	12
	%	14.9%	17.0%	15.7%		25.0%	18.8%	15.9%	7.9%	11.2%
Finance	No.	11	8	19	7	8	15	15	17	32
	%	12.6%	17.0%	14.2%	24.1%	9.1%	12.8%	34.1%	27.0%	30.0%
Wholesale	No.		8	8		17	17			
	%		17.0%	6.0%		19.3%	14.5%			
Transportation	No.	3	3	6		14	14	6	13	19
	%	3.4%	6.4%	4.5%		15.9%	12.0%	13.6%	20.6%	17.8%
Miscellaneous	No.	7	7	14					7	7
	%	8.1%	14.9%	10.4%					11.1%	6.5%
Total	No.	87	47	134	29	88	117	44	63	107
	%	64.9%	35.1%	100.0%	24.8%	75.2%	99.9%	41.1%	58.9%	100.1%

TABLE 7 READING GRADE LEVELS OF JOB RELATED READING MATERIALS

Type of Job Material	No.	Reading Grade Level
Catalogs and Rate Books	32	11.8
Form Letters	24	10.9
Labels on Packages	34	12.9
Legal Documents	14	11.0
Letters, Memos, and Notes	81	10.6
Manuals and Written Instructions	44	11.7
Order Forms, Invoices and Account Statements	55	10.5
Reports and Pamphlets	24	12.2
Reference Materials	22	11.9

reading as high as nine months beyond the twelfth grade when reading labels on packages (almost one year of college training). This grade level 12.9 could be an "artificial" figure because of the nature of the information read. Of the different types of materials read on the job, seven out of the nine required almost 11th grade level or more and five out of nine required almost 12th grade level (11.7) to be read successfully.

Table 8 illustrates that using a weighted mean, correspondence received from external sources by secretaries required a reading level of two months beyond the tenth grade and clerks read the same type of correspondence at 10.5.

However, clerks read interoffice communications at a considerably higher level (12.6) than secretaries (10.5). A reverse trend is seen in the reading of written instructions; secretaries read these materials at the 11th grade level and clerks read the materials at grade 10.8 (almost 11th grade).

How do our instructional materials stack up with industry? Comparing the reading materials in two widely used textbooks, a simulation, and industry; Table 9 shows that all three groups provided a similar distribution of reading materials to be comprehended and proofread. The simulation materials though made provisions for more verification types of reading (31.2%) than industry (17.9%). The large number of verification exercises available in the simulation material is understandable since the student needs more practice activities when learning

TABLE 8 READING GRADE LEVELS OF EXTERNAL AND INTERNAL SOURCES OF COMMUNICATION CLASSIFIED BY INDUSTRY AND JOB TITLE

Source	Industry														Weighted Mean Reading Grade Levels	
	Retail		Manufacturing		Services		Finance		Transp.		Misc.		Wholesale			
	Sec.	Gen. Clerk	Sec.	Gen. Clerk	Sec.	Gen. Clerk	Sec.	Gen. Clerk	Sec.	Gen. Clerk	Sec.	Gen. Clerk	Sec.	Gen. Clerk	Sec.	Gen. Clerk
External																
Correspondence from Customers	10.9	10.6			9.2	8.6	11.2	10.0	11.9		10.5			12.6	10.2	10.5
Internal																
Correspondence to Customers	11.5	10.1	11.3	10.8	9.2	10.7	11.2	10.0			10.5			12.4	10.6	10.7
Interoffice Communication		11.3	10.4	12.3	10.1		11.1	13.7	10.2					11.7	10.5	12.6
Written Instructions	11.9	10.8	10.2	10.5	10.5	11.5	11.4	9.6	10.1					11.9	11.8	10.8

TABLE 9 READING MATERIALS CLASSIFIED BY LEVELS OF READING COMPREHENSION

Levels of Reading Comprehension		Reading Materials		
		Textbooks	Simulation	Industry
Verification	No.	34	2,810	64
	%	6.6%	31.2%	17.9%
Comprehension	No.	357	3,973	180
	%	68.9%	44.1%	50.3%
Proofreading	No.	127	2,233	114
	%	24.5%	24.7%	31.8%
Total	No.	518	9,016	358
	%	100.0%	100.0%	100.0%

a task than after a task has been learned. On the other hand, textbooks made available only slightly over 6 percent of reading activities for verification purposes.

The major difference between the instructional verification exercises and the verification activities in industry was in the process and the materials used. For example, the instructional materials provided experiences with only printed information that required the checking and extending of invoices and purchase orders; whereas, in industry, resource materials such as catalogs and rate books were used to verify the information before calculating and extending the figures. The invoices in industry were also read mostly from handwritten materials.

On the other hand, letters, memos, and notes were read in various ways for verification purposes in the instructional materials. For instance, one textbook provided learning activities for verification of appointment notes against open dates on the calendar. A different kind of checking was used in the simulation materials. For example, the mail clerk was required to check all pieces of mail against mailing lists to see whether the return address mentioned the zip code. If not, the number was located in the Post Office Directory and added to the address; but the mail clerk's main duty was to check whether or not outgoing letters were signed before stuffing and stamping the envelopes. In industry, however, most of the

incoming letters were compared with the model form letters to determine the most appropriate response to routine inquiries from customers.

The major discrepancy noted between the instructional materials and industry's verification reading activities was the non-use of catalogs and rate books. No provisions were made for verifying the accuracy of information using catalogs and rate books or labels on packages against other sources in the instructional materials; but catalogs, rate books, and labels on packages accounted for about 34 percent of all verification reading activities identified from industry.

As in industry, letters were read in the instructional materials more often for comprehension than any other type of item. Almost 60 percent of the letters in the instructional materials required some understanding on the student's part as compared to the 24.4 percent of the letters requiring understanding by beginning office employees.

The outstanding difference between the letters read for comprehension in textbook materials and the letters read for comprehension in industry was that the letters in the instructional materials were predominantly composed by the student, whereas letters read by beginning employees in industry were read mostly for editing purposes and for gaining information. Only in very routine situations were the observed employees required to compose letters, and in most cases, model letters

were used as guides on those occasions. However, this difference might have been expected because instructional materials were providing experiences with previously acquired information, but in industry most letters were supplying information of a highly technical nature.

The second most frequent type of material read for comprehension in industry were manuals and written instruction. The instructional materials' appendix sections and end-of-chapter activities were comparable to industry's written instructions in format.

The proofreading of letters was most customarily found both in instructional materials and industry to be the item most often proofread after typing. Nevertheless, a relatively greater amount of proofreading of letters was found in the instructional materials (almost 53 percent) than in the small proportions of proofreading samples collected from industry (almost 30 percent). This finding pointed out that the proofreading activities in offices were most widely distributed among all types of items, while instructional materials seemed to have focused mostly on the proofreading of letters.

Major differences also existed in the source documents from which reading in the instructional materials and industry was done. Rough draft or handwritten materials were the largest source of reading in the business office. Even though instructional materials provided approximately the same percentage

of rough draft reading materials, most of these materials came from the simulation kits, therefore, teachers using only textbook materials will have limited opportunity to provide students with rough draft materials.

Table 10 shows the various reading grade levels (number of years of schooling) needed to comprehend the different types of items read.

The instructional materials had a higher overall mean reading grade level (12.4) than did the reading materials in the office (11.5), with the simulation being the most difficult overall reading materials (12.9 -- almost of college). Letters in the instructional materials and industry were more parallel than any other type items read with reading grade levels of 10.8 and 10.6, respectively.

To determine whether or not a significant difference existed in the reading grade levels between in-school learning activities and industry's reading job materials, a one-way analysis of variance was computed. No differences were found at the .05 level of significance between the reading grade level of the experiences available to the senior business vocational student and the reading grade level of the job materials read by the beginning employees.

TABLE 10 COMPARISONS OF READING GRADE LEVELS CLASSIFIED BY TYPE OF MATERIAL ACCORDING TO INSTRUCTION AND INDUSTRY

Type of Items	Instructional Materials				Industry
	Textbook 1	Simulation	Textbook 2	Mean	
Catalogs and Rate Books		13.5		13.5	11.8
Form Letters	13.5	13.7		13.6	10.9
Labels on Packages	12.8			12.8	12.9
Legal Documents	11.2		10.3	10.8	11.0
Letters, Memos and Notes	10.8	10.8	10.8	10.8	10.6
Manuals and Written Instructions	9.2	12.5	13.0	11.6	11.7
Order Forms, Invoices, Acct. Statements	14.4	14.5	11.9	13.6	10.5
Reports and Pamphlets	10.9	12.3	12.6	11.9	12.2
Reference Materials	9.2	13.6	13.0	11.9	11.9
Visuals	15.6	12.0		13.8	
Average Reading Grade Levels	12.0	12.9	11.9	12.4	11.5

Recommendations

Based on these findings, the following recommendations are made:

(1) Potential office employees should be provided with opportunities to read all types of materials that are job related including more emphasis on form letters and catalogues and statistical and financial tables.

(2) Secretarial students should be provided various experiences whereby the content of letters are read for information for later use, editing purposes and the adaptation of form letters for composition.

(3) Clerical students should read order forms and invoices for verification of information using other sources to validate the accuracy of the materials.

(3) Instructional materials should be organized so that step-by-step procedures are provided for carrying out a task, as in procedural manuals or job instruction sheets.

(4) More handwritten and rough draft materials should be given to the students to read and type.

(5) Students should be exposed to materials requiring reading skills ranging from the tenth grade level to at least two years beyond high school.